

DATE: July 9, 1975

To : File

FROM : Joshua Lederberg

SUBJECT: Metric of Science

Bob had certain suggestions to make about the structure of my own chapter. He thought that I should systematically review a wide variety of roles that I might occupy and not confine myself to the role of scientist. This is, of course, consistent with his own concept of role set. Among other things he felt that this would be self-exemplifying with respect to a more professional sociological interpretation of approaches to indicators.

My own thoughts were to include not only the scientist's own special perspective arriving from his particular status but also to comment on indicators as an aspect of evaluation research contrasting what is being attempted here with the successes and failures of efforts in other fields.

Also of great importance is an outline of the research issues that are occasioned by this kind of inquiry.

Other questions are what are one's expectations of an indicator and this is connected with what are the expectations about what science itself should be doing, and this of course may well be connected with our expectations about the nature of social support for and interest in science.

One should review Science Studies Journal for some relevant perspectives on this point especially the last issue.

There were other suggestions having to do with questions like the use of citation indexing as an indicator and perhaps a more detailed critical discussion of this and its implications from a political perspective would be worthwhile. Consider also the Ezrahi oriented perspective about the political implications of indicators and recall the Sage Foundation report on this question.

I would also put in some of my own thoughts about figures of merit for the way in which science is done, the efficiency of its operation and the ways in which efforts to monitor science may either promote or frustrate its basic purposes.

A related subject is the agenda for the subcommittee on science indicators of SSRC. Some items for the agenda are (1) possible program presentations at three different forthcoming meetings, the American Sociological Association, the History of Science Society, and the AAAS, but the question is who would present them; (2) Science Indicators 1974 and the role of the subcommittee in advising on the production of that volume; (3) status report on the book; (4) what role should there be

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for sociology in the National Science Foundation program, especially with Dick Atkinson's appointment.

To my question about the operational impact of the SSRC, the response was that recommended projects and workshops and that SSRC is a credible grant applicant in the organization of research programs.

I thought if there were to be such workshops, that we pay a little closer attention to empirical studies on the science policy in science budget making process per se to examine the decisional framework in which this is done at the present time.

Further on the question of citations, there is of course Moravcsik's and Cole's work on the elements that go into citations.

I also thought of setting up some explicit counter-example studies on names like Jansky but consider also Beadle and Tatum as well as other figures, perhaps Stanley. There is the mechanic chapter and the issue of notoriety versus intellectual impact.

Bob had some comments on the elements that encourage citational behavior, for example, there are particular authors who believe that their role is to "keep the memory green" - like Samuelson. On the contrary, if the target is self-identifying or self-marking, the paper itself may not be cited. So, terms like mores are hardly ever associated with the literature citation although in general social scientists are cited over much longer time-span than others. I had thought also of making special mention of authors whose work is indicated without specific citational references that these ought to be more heavily weighted, like the example of Avery in my Nobel lecture.

Note also the inquiry I have just had from NSF about the condition of science.